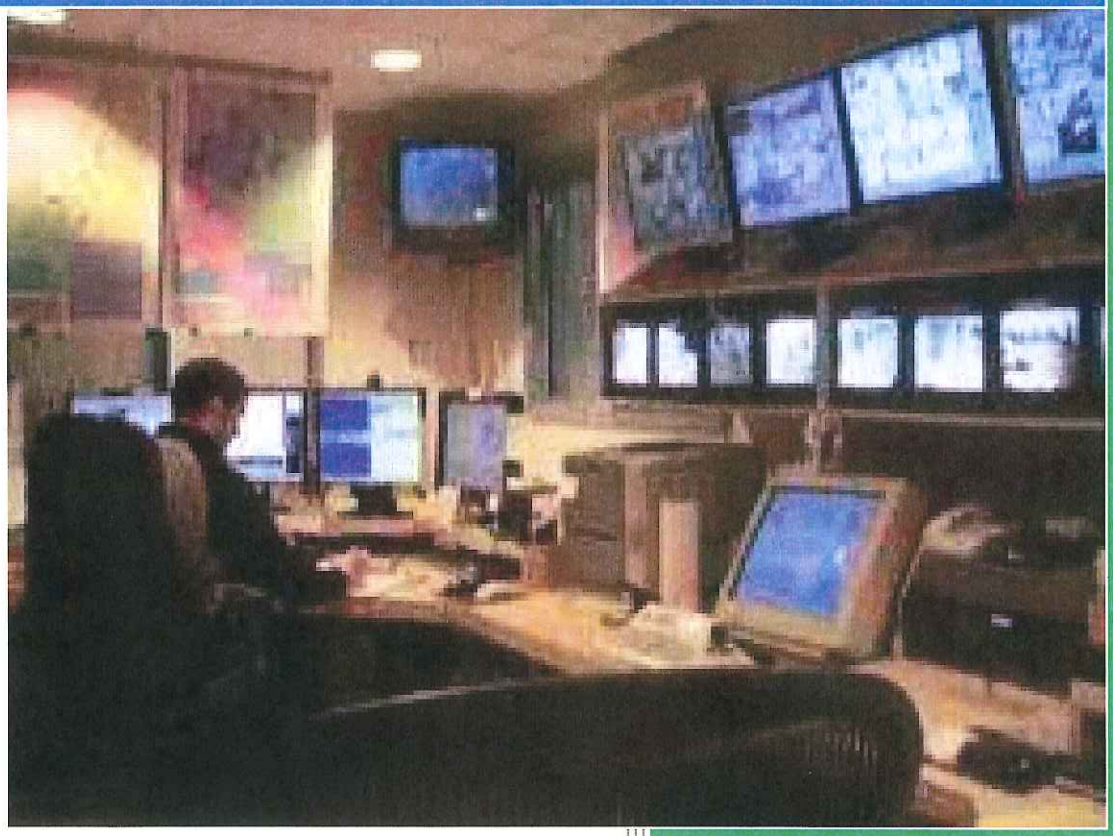
Virginia Information Technologies Agency

VITA

FY17

PSAP GRANT PROGRAM APPLICATION



VIRGINIA INFORMATION
TECHNOLOGIES AGENCY
Integrated Services Division

FY17 PSAP GRANT PROGRAM APPLICATION

HOW TO APPLY/DEADLINE

The grant application is available and accessible from VITA ISP's website (http://www.vita.virginia.gov/isp/default.aspx?id=8578). Upon completion of the application, it is to be submitted to your Regional Coordinator. Any supporting documentation must also be submitted along with the application, including mandatory budgets for projects (if applicable).

After the close of the grant application cycle, a Grant ID and email receipt notification will be sent to the e-mail address listed on the application received.

All funding requests must be submitted using the grant application. Technical assistance is available from VITA's Public Safety Communications (PSC) staff throughout the grant process. The FY17 PSAP Grant Application Cycle starts July 1, 2015 and concludes on September 30, 2015 at 5:00 pm.

ALL APPLICABLE SECTIONS MUST BE COMPLETED IN ITS ENTIRETY OR THE APPLICATION WILL BE CONSIDERED INCOMPLETE AND NOT ACCEPTED FOR CONSIDERATION.

FY17 PSAPGRANT APPLICATION

PROJECT TITLE

Greensville GIS Data Review

GRANT APPLICANT PROFILE/PROJECT CONTACT

PSAP/HOST PSAP NAME: Greensville Sheriff's Office
CONTACT TITLE: Building/Fire Official
CONTACT FIRST NAME: Charles
CONTACT LAST NAME: Veliky
ADDRESS 1: 174 Uriah Branch Way
ADDRESS 2: Click here to enter text
CITY: Emporia
ZIP CODE: 23847
CONTACT EMAIL: mveliky@greensvillecountyva.gov
CONTACT PHONE NUMBER: 434-348-4232
CONTACT MOBILE NUMBER: 434-637-1413
CONTACT FAX NUMBER: 434-348-0696
REGIONAL COORDINATOR: Lyle Hornbaker

HOST PSAP AND PARTICIPATING PSAPS/LOCALITIES

Greensville Sheriff's Office

GRANT TYPE

XXX☐ Individual PSAP ☐Shared Services

TIER

☐	Out of Service	☐	Non-Vendor Supported*
☐	Technically Outdated*	XX ☐	Strengthen
☐	Not Applicable		

If technically outdated or non-vendor supported, application MUST include age and/or version of hardware/software.

VERSION: # YEARS of HARDWARE/SOFTWARE:

PRIORITY/PROJECT FOCUS NG 9-1-1 GIS EQUIPMENT & SERVICES

If "Other" selected, please specify: Click here to enter text

FINANCIAL DATA

Amount Requested: $17,955

Total Project Cost: $17,955

STATEMENT OF NEED

This statement should reference the relationship to the current funding priorities established by the Grant Committee and include evidence of any financial need, along with additional information on the impact on operational services; consequences of not receiving funding; inclusion of project in a long-term or a strategic plan; and local sustainability:

The Virginia E-9-1-1 Services Board completed its survey of the Commonwealth's PSAP's with focus on the key aspects associated with planning, implementing, and operational aspects of a network readiness capability for NG9-1-1. This survey noted that the preparation of NG9-1-1 data is the most critical step in enabling the system to locate both the 911 caller and the emergency event. Noting, all data collector's/maintainer's (stewards) must prepare for and develop for the highly demanding data standards of NG9-1-1. As a Data steward, Greensville County understands the necessity of high quality and complete information in their data creation process. Greensville County will maintain its data as such to avoid delaying response times in mutual aid situations across the Commonwealth.

The information from this survey was used to establish a baseline for data readiness, defining gaps in our data availability and refocusing efforts in data development and collection to fill those gaps.

Greensville County elected to participate in VITA-ISP's offer to conduct a MSAG/ALI/GIS Data Analysis of our Data.

Greensville County's data (MSAG, Ali & GIS) has been reviewed, the number of violations and errors have been documented, and we are now ready to "scrub" the existing data to ensure that each dataset meets the standards of an NG9-1-1 system. This Project will have discrepancies between the data sets resolved by public safety addressing specialists; the data synchronization will be maintained from that point thereafter by the Greensville County GIS Department.

Describe how the grant will be maintained and supported in the future, if applicable.

Data synchronization and future updates to Data will be maintained in the future by the Greensville County GIS Department.

COMPREHENSIVE PROJECT DESCRIPTION

Identify the longevity or sustainability of the project. This Project will position Greensville County as one of the few Virginia localities being "Data ready" for NG911. Although a smaller jurisdiction, Greensville is proactive in most areas of technology. We are one of a small number of comparable jurisdictions of our size that operate and maintain our own GIS Data in house, making us an ideal candidate for being able to sustain the corrected Data well into the future. This is a necessary first step to becoming fully NG911 ready.
Describe how this project supports the Virginia Statewide Comprehensive 9-1-1 Plan. This project supports the Plan by adhering to many of the Goals outlined in the Plan, as well as complying with the overall Vision of the Plan, by being Proactive in the development and alignment of the Data layers that will be necessary with the deployment of NG9-1-1.

SHARED SERVICES(if applicable)

The relationship of the project to the participating PSAPs:

Click here to enter text

Intended collaborative efforts:

Resource sharing:

Click here to enter text

How does the project impact the operational or strategic plans of the participating agencies:

Provide a thorough, concise, and complete description of the project, including an outline of the goals and objectives, implementation strategy, and a work plan.

Click here to enter text

PROJECT TIMELINE FOR SHARED SERVICES & INDIVIDUAL PSAP APPLICATIONS:

For each applicable phase of the project, indicate the estimated completion date. Sample activities for each phase are included.

PROJECT PHASE	ESTIMATED COMPLETION DATE

☐ **INITIATION** (Project approved by appropriate stakeholders) Sample activities: project concept is documented, local board or governing authority approval or endorsement is received, PSAP grant application is filed, local budgets are obtained, appropriated grant funds are approved, and budgetary estimates are obtained	**08 /01 /15**
☐ **DESIGN/PLANNING** (Project, system, or solution requirements are developed) Sample activities: requirements are documented, components to be purchased are identified, and general design is documented	**09/ 01 / 15**
☐ **ACQUISITION** (Selected system or solution is procured) Sample activities: RFP (or other bid related processes) are drafted, proposals are evaluated, contract is signed, purchase orders are issued, and quotes are obtained	**07 / 15 / 16**
☐ **IMPLEMENTATION** (Selected system or solution is configured and installed) Sample activities: purchased components are delivered and installed and training is performed	**12 / 01 / 16**
☐ **TESTING/COMPLETION** (Selected system or solution is tested and put in production) Sample activities: performance of system/solution is validated and system/solution goes "live"	**03 / 15 / 17**

BUDGET AND BUDGET NARRATIVE

List the planned expenditures to be made with grant funds. (NOTE: In lieu of a line item breakdown, an itemized cost schedule or detailed vendor prepared quote may be submitted as an attachment.However, budgetary quotes received from a particular vendor(s) during the application process do not commit the PSAP to use that vendor(s) once the grant is awarded.) Briefly explain the reason for each requested budget item and provide the basis for its cost. In addition, if contingency cost has been added, please identify the amount.

Click here to enter text

Data Analysis	$16,323
Contingency	$ 1,632

Total Project	$17,955

VALUATION

How will the project be evaluated and measured for achievement and success:

Upon completion of the Data "scrubbing" activity, Greensville County will be provided with a complete Analysis of the Data collected and corrected for review , and will complete additional map updates, if deemed necessary.This Data alignment will then set the standard for all future additions and changes to the county's GIS Layers.

CONSOLIDATION (Primary or Secondary) - (complete only if applicable)

How would a consolidation take place and provide improved service:

Click here to enter text

How should it be organized and staffed:

Click here to enter text

What services should it perform:

Click here to enter text

How should policies be made and changed:

Click here to enter text

How should it be funded:

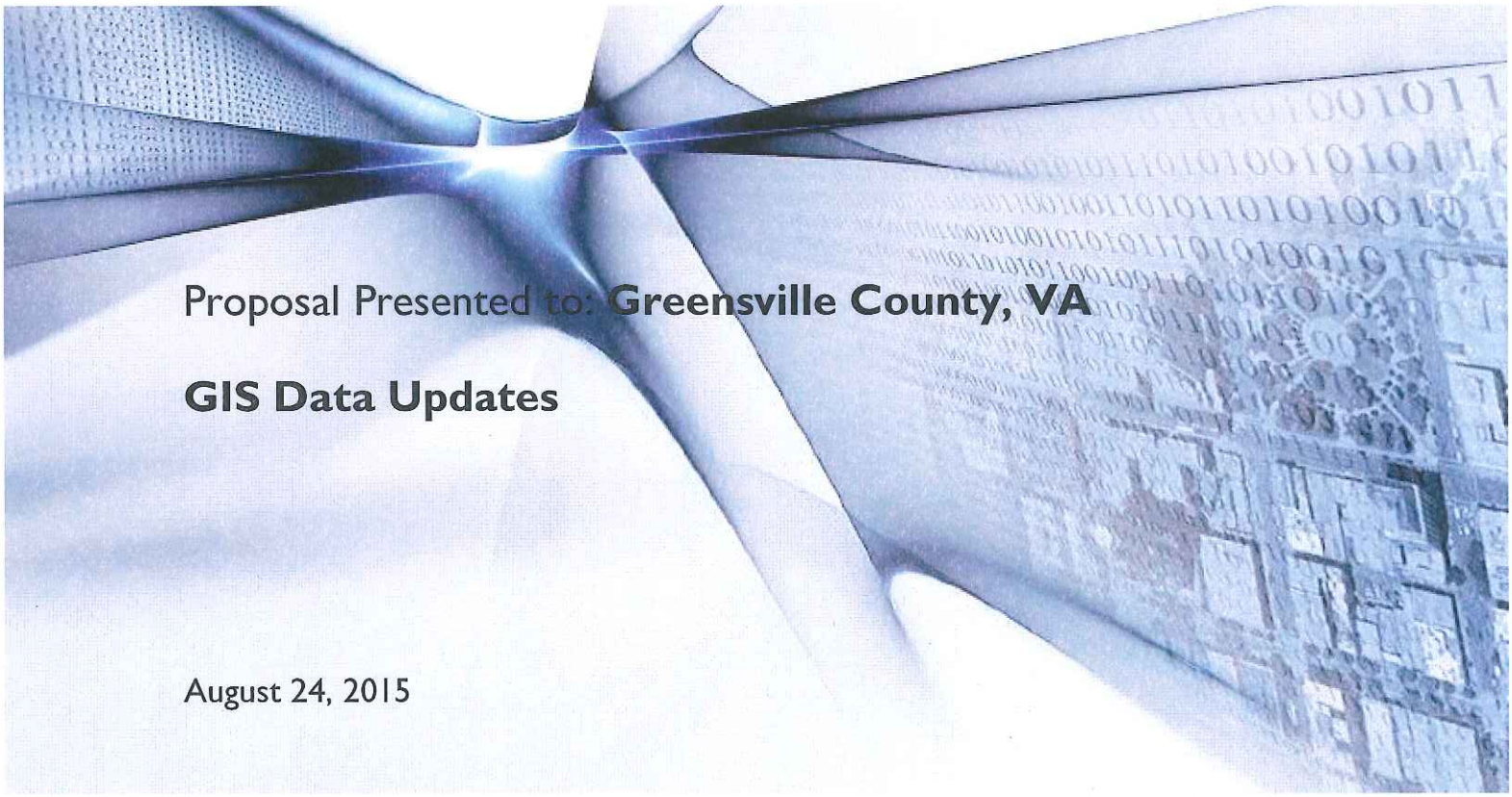
Click here to enter text

What communication changes or improvements should be made in order to better support operations:

Click here to enter text

GeoComm

"When seconds matter, we help save lives and protect property by providing essential, innovative location-based solutions to public safety professionals."



Proposal Presented to: **Greensville County, VA**

GIS Data Updates

August 24, 2015

Uniting Public Safety GIS and Communications
http://www.geo-comm.com/

Main: 320.240.0040 **Fax:** 320.240.2389 **Toll-free:** 888.436.2666
601 West St. Germain Street St. Cloud, Minnesota 56301

GIS Data Update Services

Geo-Comm, Inc. (GeoComm) proposes to complete numerous updates to Greensville County's existing Geographic Information Systems (GIS) layers and to develop new layers which will result in a highly accurate GIS dataset for Next Generation 9-1-1 (NG9-1-1). The final GIS data layers will adhere to National Emergency Number Association (NENA) NG9-1-1 GIS Standards, including meeting specific requirements for GIS data structure, synchronization, and accuracy. The foundation for these updates will be results from a 9-1-1 Data Analysis completed by GeoComm's GIS Specialists.

Our approach includes leading industry experts who will complete the following phases to provide an exceptional end product that will meet Greensville County's NG9-1-1 needs:

- ☐ Phase One: Project Initiation
- ☐ Phase Two: NG9-1-1 GIS Layer Development and Updates
- ☐ Phase Three: Quality Assurance/Quality Control
- ☐ Phase Four: Final Review and Updates

Throughout each phase, GeoComm will dedicate time to project management and ongoing communication. By partnering with GeoComm you will know the status of your project, that deliverables are being met, and have confidence your objectives are being carried through. GeoComm will provide regular status updates that will include:

- ☐ General progress updates
- ☐ Meetings held, planned, or needed
- ☐ Issues/problems encountered or anticipated
- ☐ Goals for the next reporting period
- ☐ Schedule review
- ☐ Greensville County responsibilities

Before any updates are made, GeoComm will add edit tracking fields to each of the map data layers updated during this project. The tracking fields will help Greensville County identify which features have been modified, what type of change was made, who made the change, and the date the feature was last updated.

Phase One: Project Initiation

After receiving a signed contract, one of the first steps is to make certain the GeoComm project team has an in-depth understanding of Greensville County's project goals. To accomplish this, our staff will hold a project initiation conference call with you to:

- ☐ Introduce project stakeholders to the GeoComm project team
- ☐ Review project objectives and goals

- ☐ Define mutual expectations
- ☐ Establish communication processes
- ☐ Review the project timeline, including periodic progress reporting
- ☐ Review Statewide NG9-1-1 GIS data standards
- ☐ Discuss initial GIS data schema
- ☐ Discuss existing resources that may be used in developing the GIS data layers

Phase Two: NG9-1-1 GIS Layer Development and Updates

To improve the accuracy of your GIS dataset for NG9-1-1, GeoComm will make numerous updates to the following key GIS map data layers: Roads and Address Points. The following recommended GIS layers will also be developed:

- ☐ ESN Boundaries
- ☐ MSAG Community Boundaries
- ☐ PSAP Boundary
- ☐ Authoritative Boundary

Roads Layer Updates

GeoComm will update the existing roads layer based on inconsistencies noted during our preliminary analysis and resources provided by Greensville County. If there are any discrepancies between approved project resources, GeoComm will work with Greensville County for verification. Road layer update processes will include:

Road Name Attribute Updates	Road name attributes will be updated to correspond to those in the Automatic Location Identification ALI database and Master Street Address Guide (MSAG). Greensville County will be asked to confirm the correct spelling if needed. Note: GeoComm is not responsible for any updates needed in Greensville County's ALI database or MSAG. If it is determined that a road name is incorrect in the ALI database or MSAG, GeoComm will notify Greensville County for resolution.
Address Range Attribute Updates	The following address range issues will be corrected in the roads layer: ▪ Overlapping address ranges ▪ High address range is less than the low address range ▪ Odd/even address ranges in both the from and to fields ▪ ALI database address not found in existing ranges
Topological Corrections	Road segments will be broken and snapped to create topological accuracy for proper address location. Roads will be broken at: ▪ Emergency service zone boundaries ▪ Municipal and county boundaries ▪ MSAG community boundaries ▪ True intersections with other roads
Left and Right Field Attribution	Left and right refining fields in the roads layer will be attributed with the appropriate boundary values for each side of the road. The following left and right fields will be updated or created and populated: Incorporated Municipality, Parity, Emergency Service Number (ESN), MSAG Community, County, and State.

Spatial Updates	Using aerial imagery for reference, GeoComm will visually scan the entire county to ensure accurate spatial placement of road centerlines. Roads that are not aligned with the aerials will be spatially adjusted accordingly. As part of this process, missing roads will also be identified and added as needed.

Site/Structure Layer Updates

GeoComm will update the existing site/structure layer based on inconsistencies noted during our preliminary analysis and resources provided by Greensville County. If there are any discrepancies between approved project resources, GeoComm will work with Greensville County for verification. Site/structure layer update processes will include:

Road Name Attribute Updates	Road name fields in the site/structure layer will be updated to match road names in the updated roads layer. This procedure indirectly synchronizes road names in the site/structure layer with the MSAG and ALI database.
ESN and Community Attribution	ESN, municipality, and MSAG community attribute fields will be updated with values from the final county-approved ESZ, Municipal Boundary, and MSAG Community Boundary polygon layers.
ALI Database Synchronization	GeoComm will compare the ALI database to the site/structure point layer to identify any addresses with landline telephones that are not currently represented in the site/structure point layer. Missing points will be added using aerial imagery, existing site/structure points, and available county-provided resources such as tax parcels as a guide. Newly added points will be attributed with address information from the ALI database and existing GIS data layers. The comparison process will also uncover any address discrepancies between the ALI database and the site/structure points. GeoComm will investigate these discrepancies using existing GIS data layers as a guide. If the site/structure layer appears to contain errors, the address will be updated as needed. Questionable addresses and suspected ALI database errors will be flagged for Greensville County review. Note: GeoComm is not responsible for any updates needed in Greensville County's ALI database or MSAG. If it is determined that an address is incorrect in the ALI database or MSAG, GeoComm will notify Greensville County for resolution.

Emergency Service Zones (ESZ) Layer Development

GeoComm proposes to create a new Emergency Service Zones (ESZ) polygon layer for Greensville County that collectively represents jurisdictional boundaries for the following emergency response agencies:

- ☐ Fire Response Districts
- ☐ Law Enforcement Jurisdictions
- ☐ Medical Response Zones

The ESZ layer will be developed using a combination of county-provided resources including current copies of the MSAG and ALI database, existing GIS map layers, and/or maps depicting fire, law and medical response zones. Each ESZ will be identified by a unique emergency service number (ESN) which corresponds to that found in the MSAG.

Throughout development, GeoComm will ensure:

- ☐ No gaps and overlaps exist between boundaries
- ☐ Topological accuracy with respect to the road centerline layer

A final approval map of all ESZ boundaries and corresponding attributes will be provided to Greensville County for review and verification of the accuracy. After any modifications are provided and completed by GeoComm, Greensville County will be asked to provide a final approval.

The final ESZ layer will be dissolved into individual Fire, Law, and EMS boundaries.

MSAG Community Boundary Layer

GeoComm will create an MSAG community boundary layer representing MSAG communities listed within the Greensville County MSAG. Initial boundary delineation will be determined by geocoding addresses in Greensville County's MSAG or ALI database against the road centerline layer and developing MSAG Community boundaries using the geocode results as a guide.

Throughout development, GeoComm will ensure:

- ☐ No gaps and overlaps exist between boundaries
- ☐ topologically accuracy with respect to the road centerline layer
- ☐ accurate community boundaries are depicted

When updates are complete, GeoComm will provide a map of the MSAG Community boundary layer to Greensville County for final verification and approval.

Public Safety Answering Point (PSAP) Boundary Development

In a future NG9-1-1 system, the PSAP boundary is the most critical GIS data layer for initial routing of 9-1-1 calls to the correct PSAP. GeoComm will develop a PSAP boundary layer for Greensville County based on existing municipal and/or county boundary layers. GeoComm will make minor topological adjustments along borders; ensuring boundaries are snapped to roads where applicable.

Authoritative Boundary Development

In a future NG9-1-1 system, GIS data will be provided from a variety of sources and then coalesced into a statewide GIS dataset used for 9-1-1 call routing and location validation. An authoritative boundary is intended to represent the boundary extent (city, county, region) for which the GIS data is provided. It will be used primarily for reporting GIS data discrepancies back to the source for remediation.

GeoComm will develop an authoritative boundary for Greensville County, consisting of a single polygon representing the county boundary. The foundation for this layer will be an existing Greensville County-

provided boundaries layer. GeoComm will make minor topological adjustments along county borders; ensuring boundaries are snapped to roads where applicable.

Phase Three: Quality Assurance/Quality Control

Quality control is an integral part of all our projects. Before the final GIS data is provided to Greensville County, GeoComm's GIS Specialists will complete numerous Quality Assurance/Quality Control (QA/QC) audits to ensure the final map data deliverables are accurate.

GeoComm's QA/QC methods are specific to the GIS data needs of the public safety industry; we have developed and implemented a structured QA/QC program consisting of over 25 procedures to increase the accuracy of public safety GIS data. Many of GeoComm's QA/QC procedures are automated using GeoLynx DMS, which offers the ability to export a detailed report of results and zoom directly to the problem area for efficient error correction.

GeoComm's QA/QC curriculum consists of several audits for the following layers:

- ☐ Site/Structure Layer
- ☐ Road Centerline Layer
- ☐ Polygon Boundary Layers
- ☐ Multi-Layer Topology

Site/Structure Layer

GeoComm will perform several audits to ensure the quality of addresses in the Site/Structure Layer. The audits used for checking addresses include:

- ☐ Address Missing Attribute Audit - to identify missing or invalid values in pertinent attribute fields
- ☐ Address Spacing Audit - to identify duplicate addresses
- ☐ Address Sanity Audit - to ensure logical assignment of house numbers with respect to centerline
- ☐ Geocode to Roads – to verify synchronization of site/structure layer attributes with attributes in the road centerline layer
- ☐ In-depth Visual Review - to double check spatial accuracy and point layer completeness

Road Centerline Layer

GeoComm will perform several audits to ensure the quality of the road centerline layer. The audits used for checking the road centerline layer include:

- ☐ Address Range Audits - to identify overlapping address ranges and ranges with odd/even and from/to inconsistencies
- ☐ Topology Audit - to locate unbroken and unsnapped intersections
- ☐ Missing Attribute Audit - to identify missing or invalid values in pertinent attribute fields

- Road Name Audits – to ensure proper road name standardization
- Length Audit – to identify road segments longer or shorter than a specified length

Polygon Boundary Layers

GeoComm will perform several audits to ensure the quality of the ESZ, Municipal, MSAG Community, PSAP, and Authoritative boundary layers. The audits used for checking these boundary layers include:

- Topology Audit – to locate gaps and overlaps in polygon coverage
- Missing Attribute Audit - to identify missing or invalid values in pertinent attribute fields
- Duplicate Audit – to check for duplicate attributes

Multi-Layer Topology

The Multi-Layer Topology audit verifies road centerline segments to determine if they touch or cross ESZ, Municipal, MSAG Community, PSAP, and Authoritative boundary layers. All roads will be broken where they cross these polygon boundaries to ensure that addresses (based on address ranges) are properly located within the correct boundary on the map. Boundaries that are coincident with road segments will be snapped to those road segments at each vertex.

Phase Four: Final Review and Updates

After initial map data updates are complete, GeoComm will provide a list of remaining errors with revision recommendations for Greensville County to review, which may include update recommendations for the ALI database and MSAG.

GeoComm will complete one additional comparison of the ALI database and MSAG to the map data layers if updated versions are provided within one month of the delivery of the suggestions. GeoComm will review the results of this comparison and complete additional map data updates, if deemed necessary.

When the final updates are complete, GeoComm will provide Greensville County with the deliverables outlined in the following section.

Note: Any future map data layer updates can be completed through an additional map data layer update work authorization or map data maintenance contract.

GeoComm Deliverables

General project deliverables to Greensville County include:

- ☐ Project schedule
- ☐ Regular status reports and conference calls

Upon project completion, GeoComm will provide Greensville County with:

- ☐ The following NG9-1-1 compliant map data layers
  - ☐ Roads Layer
  - ☐ ESZ Layer, and individual Fire, Law, and EMS layers
  - ☐ Site/Structure Layer
  - ☐ PSAP Boundary Layer
  - ☐ Authoritative Boundary Layer
- ☐ A digital list of remaining errors
- ☐ Suggestions for updating the ALI database and MSAG

GeoComm will deliver the final GIS map data layers in Esri format and in the current layer's projection.

Note: Completeness and accuracy of the final GIS layers is dependent on the project resources provided by Greensville County.

Greensville County Responsibilities

It is requested that Greensville County provide the following support:

- ☐ Assist in coordinating and attend periodic conference calls
- ☐ Provide pertinent project information and documentation
- ☐ Assist in the ongoing quality assurance
- ☐ Provide a single point of contact at Greensville County available for communication throughout the project
- ☐ Review preliminary ESZ map and provide input on updates needed
- ☐ Confirm location of questionable addresses provided by GeoComm within a 30 day timeframe
- ☐ Review final synchronization results and provide any needed GIS data updates back to GeoComm within a 30 day timeframe

Greensville County is also responsible for providing the following project resources:

- ☐ Current GIS parcel layer, including map projection information
- ☐ Additional existing GIS data in Esri format, including map projection information
- ☐ Current copies of Greensville County's ALI database and MSAG in Microsoft Excel format
- ☐ Digital or hard copy resources depicting roads and boundary updates, as requested

GIS Services Pricing

Description	Total Price
NG9-1-1 GIS Data Update Services	$16,323
Total:	**$16,323**

Notes: Prices are valid for a period of 90 days.

GIS updates are a one-time service. Future map data updates can be completed by GeoComm through an additional map data layer update work authorization or a GIS map data maintenance agreement.

Total does not include sales tax. Taxes will be determined at contract signing. Crawford County is responsible for paying applicable sales tax.